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Security Council

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# Note by the President of the Security Council

At its 6335th meeting, held on 9 June 2010 in connection with the item entitled "Non-proliferation", the Security Council adopted resolution 1929 (2010).

In paragraph 4 of the resolution, the Security Council requested the Director General of the International Atomic Energy Agency to communicate to the Security Council all his reports on the application of safeguards in the Islamic Republic of Iran.

Accordingly, the President herewith circulates the report of the Director General dated 22 May 2013 (see annex).

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## Annex

[Original: French]

### Letter dated 22 May 2013 from the Director General of the International Atomic Energy Agency addressed to the President of the Security Council

I have the honour to enclose herewith the report requested by the Security Council in its resolution 1929 (2010), which I have submitted today to the Board of Governors of the International Atomic Energy Agency (see enclosure).

I should be grateful if you would bring this letter and the enclosed report to the attention of all members of the Security Council.

(*Signed*) Yukia **Amano**

**Enclosure***

[Original: Arabic, Chinese, English, French, Russian and Spanish]

# Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran

## Report by the Director General

## A. Introduction

1. This report of the Director General to the Board of Governors and, in parallel, to the Security Council, is on the implementation of the NPT Safeguards Agreement[1] and relevant provisions of Security Council resolutions in the Islamic Republic of Iran (Iran).

2. The Security Council has affirmed that the steps required by the Board of Governors in its resolutions[2] are binding on Iran.[3] The relevant provisions of the aforementioned Security Council resolutions[4] were adopted under Chapter VII of the United Nations Charter, and are mandatory, in accordance with the terms of those resolutions.[5]

3. This report addresses developments since the Director General's previous report (GOV/2013/6, 21 February 2013), as well as issues of longer standing. It

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* Circulated to the Board of Governors of the International Atomic Energy Agency under the symbol GOV/2013/27.

[1] The Agreement between Iran and the Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons (INFCIRC/214), which entered into force on 15 May 1974.

[2] The Board of Governors has adopted 12 resolutions in connection with the implementation of safeguards in Iran: GOV/2003/69 (12 September 2003); GOV/2003/81 (26 November 2003); GOV/2004/21 (13 March 2004); GOV/2004/49 (18 June 2004); GOV/2004/79 (18 September 2004); GOV/2004/90 (29 November 2004); GOV/2005/64 (11 August 2005); GOV/2005/77 (24 September 2005); GOV/2006/14 (4 February 2006); GOV/2009/82 (27 November 2009); GOV/2011/69 (18 November 2011); and GOV/2012/50 (13 September 2012).

[3] In resolution 1929 (2010), the Security Council, inter alia: affirmed that Iran shall, without further delay, take the steps required by the Board in GOV/2006/14 and GOV/2009/82; reaffirmed Iran's obligation to cooperate fully with the IAEA on all outstanding issues, particularly those which give rise to concerns about the possible military dimensions of the Iranian nuclear programme; decided that Iran shall, without delay, comply fully and without qualification with its Safeguards Agreement, including through the application of modified Code 3.1 of the Subsidiary Arrangements; and called upon Iran to act strictly in accordance with the provisions of its Additional Protocol and to ratify it promptly (paras. 1-6).

[4] The United Nations Security Council has adopted the following resolutions on Iran: 1696 (2006); 1737 (2006); 1747 (2007); 1803 (2008); 1835 (2008); and 1929 (2010).

[5] By virtue of its Relationship Agreement with the United Nations (INFCIRC/11, Part I.A), the Agency is required to cooperate with the Security Council in the exercise of the Council's responsibility for the maintenance or restoration of international peace and security. All Member States of the United Nations agree to accept and carry out the decisions of the Security Council and, in this respect, to take actions which are consistent with their obligations under the United Nations Charter.

focuses on those areas where Iran has not fully implemented its binding obligations, as the full implementation of these obligations is needed to establish international confidence in the exclusively peaceful nature of Iran's nuclear programme.

## B. Clarification of Unresolved Issues

4. In November 2011, the Board adopted resolution GOV/2011/69, in which, inter alia, it stressed that it was essential for Iran and the Agency to intensify their dialogue aimed at the urgent resolution of all outstanding substantive issues for the purpose of providing clarifications regarding those issues, including access to all relevant information, documentation, sites, material and personnel in Iran. In that resolution, the Board also called on Iran to engage seriously and without preconditions in talks aimed at restoring international confidence in the exclusively peaceful nature of Iran's nuclear programme. In light of this, between January and the beginning of September 2012, Agency and Iranian officials held six rounds of talks in Vienna and Tehran, including during a visit by the Director General to Tehran in May 2012. However, no concrete results were achieved.[6]

5. On 13 September 2012, the Board adopted resolution GOV/2012/50, in which, inter alia, it decided that Iranian cooperation with Agency requests aimed at the resolution of all outstanding issues was essential and urgent in order to restore international confidence in the exclusively peaceful nature of Iran's nuclear programme. The Board also stressed that it was essential for Iran to immediately conclude and implement a structured approach for resolving outstanding issues related to possible military dimensions to its nuclear programme, including, as a first step, providing the Agency with the access it had requested to relevant sites. In light of this, between mid-December 2012 and mid February 2013, Agency and Iranian officials held three further rounds of talks in Tehran aimed at finalizing the structured approach document.

6. Since the Director General's previous report, Agency and Iranian officials have held one further round of talks, in Vienna on 15 May 2013, aimed at concluding the structured approach document.[7] No agreement was reached and the Agency has not been able to begin substantive work with Iran on resolving the outstanding issues, including those related to possible military dimensions to Iran's nuclear programme.

## C. Facilities Declared under Iran's Safeguards Agreement

7. Under its Safeguards Agreement, Iran has declared to the Agency 16 nuclear facilities and nine locations outside facilities where nuclear material is customarily used (LOFs).[8] Notwithstanding that certain of the activities being undertaken by Iran at some of the facilities are contrary to the relevant resolutions of the Board of Governors and the Security Council, as indicated below, the Agency continues to verify the non-diversion of declared material at these facilities and LOFs.

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[6] GOV/2012/37, para. 8.

[7] The current focus of the document is on the issues outlined in the Annex to the Director General's November 2011 report (GOV/2011/65). The other outstanding issues will need to be addressed separately.

[8] All of the LOFs are situated within hospitals.

## D. Enrichment Related Activities

8. Contrary to the relevant resolutions of the Board of Governors and the Security Council, Iran has not suspended its enrichment related activities in the declared facilities referred to below. All of these activities are under Agency safeguards, and all of the nuclear material, installed cascades and the feed and withdrawal stations at those facilities are subject to Agency containment and surveillance.[9]

9. Iran has stated that the purpose of enriching $UF_6$ up to 5% U-235 is the production of fuel for its nuclear facilities[10] and that the purpose of enriching $UF_6$ up to 20% U-235 is the manufacture of fuel for research reactors.[11]

10. Since Iran began enriching uranium at its declared facilities, it has produced at those facilities:

- 8960 kg (+689 kg since the Director General's previous report) of $UF_6$ enriched up to 5% U-235, of which 6,357 kg (+383 kg since the Director General's previous report) remain in the form of $UF_6$ enriched up to 5% U-235[12] and the rest has been further processed (as detailed in paras. 18, 24, 25 and 39 below);[13] and
- 324 kg (+44 kg since the Director General's previous report) of $UF_6$ enriched up to 20% U-235, of which 182 kg (+15 kg since the Director General's previous report) remain in the form of $UF_6$ enriched up to 20% U-235[14] and the rest has been further processed (as detailed in para. 48 below).

### D.1. Natanz

11. **Fuel Enrichment Plant**: FEP is a centrifuge enrichment plant for the production of low enriched uranium (LEU) enriched up to 5% U-235, which was first brought into operation in 2007. The plant is divided into Production Hall A and Production Hall B. According to design information submitted by Iran, eight units are planned for Production Hall A, with 18 cascades in each unit, which totals approximately 25,000 centrifuges in 144 cascades. Iran has yet to provide the corresponding design information for Production Hall B.

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[9] In line with normal safeguards practice, small amounts of nuclear material (e.g. some waste and samples) may not be subject to containment and surveillance.

[10] As declared by Iran in its design information questionnaires (DIQs) for the Fuel Enrichment Plant (FEP) at Natanz.

[11] GOV/2010/10, para. 8; as declared by Iran in its DIQ for the Fuel Plate Fabrication Plant (FPFP).

[12] This comprises nuclear material in storage, as well as nuclear material in the cold traps and still inside cylinders attached to the enrichment process.

[13] On 6 March 2013, Iran informed the Agency that it had previously overestimated the quantity of natural $UF_6$ fed into FEP by 186 kg and underestimated the quantity of $UF_6$ enriched up to 5% U-235 produced at FEP by 2 kg in the period between 22 October 2012 and 3 February 2013. These revised estimates are incorporated in the figures provided in paras. 10 and 14 of this report. The Agency will verify the quantities of nuclear material at the next physical inventory verification (PIV) in autumn 2013.

[14] This comprises nuclear material in storage, nuclear material in the cold traps and still inside cylinders attached to the enrichment process, and nuclear material in cylinders attached to the conversion process.

12. As of 15 May 2013, Iran had fully installed 79 IR-1 cascades in Production Hall A, partially installed one other IR-1 cascade and completed preparatory installation work for another 46 IR-1 cascades.[15] On that date, Iran declared that it was feeding 53 of the fully installed IR 1 cascades with natural $UF_6$.

13. Iran has continued to install IR-2m centrifuges and empty centrifuge casings in one of the units of Production Hall A.[16] As of 15 May 2013, four cascades had been fully installed and one cascade had been partially installed with IR-2m centrifuges and empty centrifuge casings, and preparatory installation work had been completed for another 13 IR-2m cascades;[17] none of the IR-2m centrifuges at FEP had been fed with natural $UF_6$.

14. As previously reported, the Agency has confirmed that, as of 21 October 2012, 85,644 kg of natural $UF_6$ had been fed into the cascades since production began in February 2007, and a total of 7,451 kg of $UF_6$ enriched up to 5% U-235 had been produced. Iran has estimated that, between 22 October 2012 and 4 May 2013, a total of 16,594 kg of natural $UF_6$ was fed into the cascades and a total of approximately 1,509 kg of $UF_6$ enriched up to 5% U-235 was produced. This would result in a total production of 8,960 kg of $UF_6$ enriched up to 5% U-235 since production began.

15. Based on the results of the analysis of environmental samples taken at FEP since February 2007,[18] and other verification activities, the Agency has concluded that the facility has operated as declared by Iran in the relevant design information questionnaire (DIQ).

16. **Pilot Fuel Enrichment Plant**: PFEP is a pilot LEU production, and research and development (R&D) facility, which was first brought into operation in October 2003. It has a cascade hall that can accommodate six cascades, and is divided between an area designated by Iran for the production of $UF_6$ enriched up to 20% U-235 (Cascades 1 and 6) and an area designated by Iran for R&D (Cascades 2, 3, 4 and 5).

17. ***Production area***: As of 14 May 2013, Iran was continuing to feed low enriched $UF_6$ into two interconnected cascades (Cascades 1 and 6) containing a total of 328 IR-1 centrifuges.

18. As previously reported,[19] the Agency has verified that, as of 15 September 2012, 1,119.6 kg of $UF_6$ enriched up to 5% U-235 produced at FEP had been fed into the cascades in the production area since production began in February 2010, and that a total of 129.1 kg of $UF_6$ enriched up to 20% U-235 had been produced. Iran has estimated that, between 16 September 2012 and 10 May 2013, a total of 234.1 kg of $UF_6$ enriched up to 5% U-235 produced at FEP was fed into the cascades in the production area and that approximately 33.7 kg of $UF_6$ enriched up to 20% U-235 were produced. This would result in a total production of 162.8 kg of $UF_6$ enriched up to 20% U-235 at PFEP since production began, of which 150.0 kg have been withdrawn from the process and verified by the Agency.

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[15] As of 15 May 2013, 13 555 IR-1 centrifuges (+886 since the Director General's previous report) were installed in FEP.

[16] GOV/2013/6, para. 13.

[17] As of 15 May 2013, a total of 689 IR-2m centrifuges and empty centrifuge casings (+509 since the Director General's previous report) was installed in FEP.

[18] Results are available to the Agency for samples taken up to 20 October 2012.

[19] GOV/2012/55, para. 18.

19. ***R&D area***: Since the Director General's previous report, Iran has installed one new type of centrifuge (IR-5) for the first time. In addition, Iran has been intermittently feeding natural $UF_6$ into IR-6s centrifuges as single machines and into IR-1, IR-2m, IR-4 and IR-6 centrifuges, sometimes into single machines and sometimes into cascades of various sizes.[20]

20. Between 13 February 2013 and 10 May 2013, a total of approximately 556.7 kg of natural $UF_6$ was fed into centrifuges in the R&D area, but no LEU was withdrawn as the product and the tails were recombined at the end of the process.

21. As previously reported,[21] Iran informed the Agency in February 2013 that it planned to start withdrawing from Cascades 4 and 5 the product and the tails separately, rather than recombining them at the end of the process as it had done previously. In a letter dated 24 April 2013, Iran informed the Agency that the "experimental activities over cascades 4 and 5 have been postponed".

22. Based on the results of the analysis of environmental samples taken at PFEP,[22] and other verification activities, the Agency has concluded that the facility has operated as declared by Iran in the relevant DIQ.

## D.2. Fordow

23. **Fordow Fuel Enrichment Plant**: FFEP is, according to the DIQ of 18 January 2012, a centrifuge enrichment plant for the production of $UF_6$ enriched up to 20% U-235 and the production of $UF_6$ enriched up to 5% U-235. Additional information from Iran is still needed in connection with this facility, particularly in light of the difference between the original stated purpose of the facility and the purpose for which it is now being used.[23] The facility, which was first brought into operation in 2011, is designed to contain up to 2,976 centrifuges in 16 cascades, divided between Unit 1 and Unit 2. To date, all of the centrifuges installed are IR-1 machines.[24] Iran has yet to inform the Agency which of the cascades are to be used for enrichment of $UF_6$ up to 5% U-235 and/or for enrichment of $UF_6$ up to 20% U-235.[25]

24. As of 15 May 2013, Iran was continuing to feed four cascades (configured in two sets of two interconnected cascades) of Unit 2 with $UF_6$ enriched up to 5% U-235;[26] none of the other 12 cascades in FFEP had been fed with $UF_6$.

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[20] On 14 May 2013, there were 19 IR-4 centrifuges, 14 IR-6 centrifuges, three IR-6s centrifuges and one IR-5 centrifuge installed in Cascade 2, 19 IR-1 centrifuges and three IR-2m centrifuges installed in Cascade 3, 164 IR-4 centrifuges installed in Cascade 4 and 162 IR-2m centrifuges installed in Cascade 5.

[21] GOV/2013/6, para. 22.

[22] Results are available to the Agency for samples taken up to 3 February 2013.

[23] GOV/2009/74, paras. 7 and 14; GOV/2012/9, para. 24. To date, Iran has provided the Agency with an initial DIQ and three revised DIQs. Each of the DIQs has stated a different purpose for the facility.

[24] As of 15 May 2013, 2,710 centrifuges were installed at FFEP (unchanged from the Director General's previous report).

[25] In a letter to the Agency dated 23 May 2012, Iran stated that the Agency would be notified about the production level of the cascades prior to their operation (GOV/2012/23, para. 25).

[26] The number of centrifuges being fed (696) remained unchanged from that reflected in the Director General's previous report.

25. As previously reported,[27] the Agency has verified that, as of 17 November 2012, a total of 769 kg of $UF_6$ enriched up to 5% U-235 produced at FEP had been fed into cascades at FFEP since production began in December 2011, and that 101.2 kg of $UF_6$ enriched up to 20% U-235 had been produced. Iran has estimated that between 18 November 2012 and 10 May 2013, a total of 427.3 kg of $UF_6$ enriched up to 5% U-235 was fed into cascades at FFEP, and that approximately 60.4 kg of $UF_6$ enriched up to 20% U-235 were produced. This would result in a total production of 161.6 kg of $UF_6$ enriched up to 20% U-235 since production began, 151.7 kg of which have been withdrawn from the process and verified by the Agency.

26. Based on the results of the analysis of environmental samples taken at FFEP,[28] and other verification activities, the Agency has concluded that the facility has operated as declared by Iran in its most recent DIQ for FFEP.

### D.3. Other Enrichment Related Activities

27. Iran has not provided a substantive response to Agency requests for design information in relation to announcements made by Iran concerning the construction of ten new uranium enrichment facilities, the sites for five of which, according to Iran, have been decided.[29] Nor has Iran provided information, as requested by the Agency, in connection with its announcement on 7 February 2010 that it possessed laser enrichment technology.[30] As a result of Iran's lack of cooperation on those issues, the Agency is unable to verify and report fully on these matters.

## E. Reprocessing Activities

28. Pursuant to the relevant resolutions of the Board of Governors and the Security Council, Iran is obliged to suspend its reprocessing activities, including R&D.[31] Iran has stated that it "does not have reprocessing activities".[32]

29. The Agency has continued to monitor the use of hot cells at the Tehran Research Reactor (TRR)[33] and the Molybdenum, Iodine and Xenon Radioisotope Production (MIX) Facility.[34] The Agency carried out an inspection and design information verification (DIV) at TRR on 7 May 2013, and a DIV at the MIX Facility on 8 May 2013. It is only with respect to TRR, the MIX Facility and the other facilities to which the Agency has access that the Agency can confirm that there are no ongoing reprocessing related activities in Iran.

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[27] GOV/2013/6, para. 26.

[28] Results are available to the Agency for samples taken up to 2 February 2013.

[29] "Iran Specifies Location for 10 New Enrichment Sites", Fars News Agency, 16 August 2010.

[30] Cited on the website of the Presidency of the Islamic Republic of Iran, 7 February 2010, at http://www.president.ir/en/?ArtID=20255.

[31] S/RES/1696 (2006), para. 2; S/RES/1737 (2006), para. 2; S/RES/1747 (2007), para. 1; S/RES/1803 (2008), para. 1; S/RES/1835 (2008), para. 4; and S/RES/1929 (2010), para. 2.

[32] Letter to the Agency dated 15 February 2008.

[33] TRR is a 5 MW reactor which operates with 20% U-235 enriched fuel and is used for the irradiation of different types of targets and for research and training purposes.

[34] The MIX Facility is a hot cell complex for the separation of radiopharmaceutical isotopes from targets, including uranium, irradiated at TRR. The MIX Facility is not currently processing any uranium targets.

## F. Heavy Water Related Projects

30. Contrary to the relevant resolutions of the Board of Governors and the Security Council, Iran has not suspended work on all heavy water related projects, including, at Arak, the ongoing construction of the Iran Nuclear Research Reactor (IR-40 Reactor), which is under Agency safeguards, and the production of heavy water at the Heavy Water Production Plant (HWPP), which is not under Agency safeguards.[35]

31. **IR-40 Reactor**: The IR-40 Reactor is a 40 MW heavy water moderated research reactor designed to contain 150 natural uranium fuel assemblies.

32. As previously reported,[36] the following major components have been installed at the IR-40 Reactor: the containment overhead crane; the moderator and primary coolant heat exchangers, circuit piping and purification systems; the moderator storage tanks; and the pressurizer for the reactor cooling system. On 6 May 2013, the Agency carried out a DIV at the IR-40 Reactor and observed that the reactor vessel had been received at the site but had yet to be installed. On the same date, the Agency also observed that a number of other major components had yet to be installed, including the control room equipment, the refuelling machine and reactor cooling pumps. During the DIV, Iran confirmed the following commissioning schedule for the IR-40 Reactor: Phase 1 — pre-commissioning (using dummy fuel assemblies and light water) in the fourth quarter of 2013; Phase 2 — commissioning (using real fuel assemblies and heavy water) in the first quarter of 2014; expected to become operational during the third quarter of 2014.

33. Iran has continued its activities related to the testing of prototype natural uranium fuel rods and fuel assemblies and its production of pellets for the IR-40 Reactor (see paras. 45 and 46 below). In a letter dated 10 March 2013, Iran informed the Agency that it planned to produce 55 fuel assemblies for the IR-40 Reactor by 9 August 2013.

34. On 1 May 2013, Iran provided some information regarding the reactor vessel recently received at the IR-40 Reactor site. Notwithstanding, as reiterated by the Agency in a letter to Iran dated 8 May 2013, an updated DIQ for the IR-40 Reactor is urgently required.

35. Contrary to Iran's obligations under the modified Code 3.1 of the General Part of the Subsidiary Arrangements to its Safeguards Agreement, Iran has not provided the Agency with an updated DIQ for the IR-40 Reactor since 2006. As the date of the commencement of the IR-40 Reactor's operation approaches, this lack of up to date design information is having an increasingly adverse impact on the Agency's ability to verify the design of the facility and to implement an effective safeguards approach.[37]

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[35] S/RES/1737 (2006), para. 2; S/RES/1747 (2007), para. 1; S/RES/1803 (2008), para. 1; S/RES/1835 (2008), para. 4; and S/RES/1929 (2010), para. 2.

[36] The Director General's quarterly reports have provided updated information on the installation of major components at the IR-40 Reactor dating back to the report of September 2010 (GOV/2010/46, para. 21).

[37] GOV/2012/37, para. 46.

36. **Heavy Water Production Plant** The HWPP is a facility for the production of heavy water with a design capacity to produce 16 tonnes of nuclear grade heavy water annually.

37. Despite requests from the Agency, Iran has not provided access to the HWPP since the Agency's visit there on 17 August 2011. As a result, the Agency is relying only on satellite imagery to monitor the status of the HWPP. Based on recent images available to the Agency, the plant appears to continue to be in operation. To date, despite repeated requests from the Agency, Iran has not permitted the Agency to take samples of the heavy water stored at the Uranium Conversion Facility (UCF).[38]

## G. Uranium Conversion and Fuel Fabrication

38. Although Iran is obliged to suspend all enrichment related activities and heavy water related projects, it is conducting a number of activities at UCF, the Fuel Manufacturing Plant (FMP) and the Fuel Plate Fabrication Plant (FPFP) at Esfahan, as indicated below, which are in contravention of those obligations, notwithstanding that the facilities are under Agency safeguards.

39. Since Iran began conversion and fuel fabrication at its declared facilities, it has, inter alia:

- Produced 550 tonnes of natural $UF_6$ at UCF,[39] of which 122 tonnes have been transferred to FEP;
- Fed into the R&D conversion process at UCF 53 kg of $UF_6$ enriched to 3.34% U-235 and produced 24 kg of uranium in the form of $UO_2$;[40]
- Fed into the conversion process at FPFP 140.8 kg of $UF_6$ enriched up to 20% U-235 (+29.8 kg since the Director General's previous report) and produced 63.1 kg of uranium in the form of $U_3O_8$; and
- Transferred to TRR six fuel assemblies containing uranium enriched up to 20% U-235 and two fuel assemblies containing uranium enriched to 3.34% U-235.

40. **Uranium Conversion Facility**: UCF is a conversion facility for the production of natural $UF_6$ and natural $UO_2$, both from uranium ore concentrate (UOC). It is planned that UCF will also produce $UO_2$ powder from $UF_6$ enriched up to 5% U-235, uranium metal ingots from natural and depleted $UF_4$, and $UF_4$ from depleted $UF_6$.

41. Between 21 and 23 April 2013, the Agency carried out a physical inventory verification (PIV) at UCF, the results of which are now being evaluated by the Agency.

42. Since the previous report, Iran has begun to conduct R&D conversion activities involving the use of natural $UF_6$ for the production of $UO_2$.[41] The Agency has verified that, as of 23 April 2013, Iran had produced 12.02 tonnes of natural uranium in the form of $UO_2$ through the conversion of UOC. As of 8 May 2013, the

[38] GOV/2010/10, paras. 20 and 21.
[39] GOV/2012/37, para. 33.
[40] GOV/2012/55, para. 35.
[41] GOV/2013/6, para. 38; Iran had previously conducted similar R&D conversion activities using $UF_6$ enriched up to 3.34% U-235 (GOV/2012/55, para. 35).

Agency had verified that Iran had transferred 6.73 tonnes of natural uranium in the form of $UO_2$ to FMP.

43. The Agency is still assessing Iran's declaration in relation to its recovery of the nuclear material that spilled onto the floor of the facility when a storage tank ruptured last year.[42]

44. **Fuel Manufacturing Plant**: FMP is a facility for the fabrication of nuclear fuel assemblies for power and research reactors.

45. As previously reported,[43] in November 2012 the Agency verified one prototype IR-40 natural uranium fuel assembly before its transfer to TRR for irradiation testing. On 20 April 2013, the Agency verified 36 additional prototype natural uranium fuel assemblies prior to their transfer to the Heavy Water Zero Power Reactor (near Esfahan) for testing.

46. On 5 and 6 May 2013, the Agency carried out an inspection and a DIV at FMP and confirmed the ongoing manufacture of pellets for the IR-40 Reactor using natural $UO_2$. Although Iran has previously produced dummy fuel assemblies for the IR-40 Reactor, as of 6 May 2013, it had yet to start manufacturing fuel assemblies containing nuclear material for that reactor.

47. **Fuel Plate Fabrication Plant**: FPFP is a facility for the conversion of $UF_6$ enriched up to 20% U-235 into $U_3O_8$ and the manufacture of fuel assemblies made of fuel plates containing $U_3O_8$.

48. As previously reported,[44] the Agency has verified that, as of 26 September 2012, a total of 82.7 kg of $UF_6$ enriched up to 20% U-235 had been fed into the conversion process and 38.0 kg of uranium in the form of $U_3O_8$ had been produced. Iran has estimated that, between 27 September 2012 and 6 May 2013, 58.1 kg of $UF_6$ enriched up to 20% U-235 were fed into the conversion process at FPFP and 25.1 kg of uranium in the form of $U_3O_8$ were produced. This would bring the total amount of $UF_6$ enriched up to 20% U-235 which had been fed into the conversion process to 140.8 kg and the total amount of uranium in the form of $U_3O_8$ which had been produced to 63.1 kg.[45]

49. The Agency has verified that, as of 7 May 2013, Iran had produced at FPFP one experimental fuel assembly and 16 TRR-type fuel assemblies, of which six had been transferred to TRR.

## H. Possible Military Dimensions

50. Previous reports by the Director General have identified outstanding issues related to possible military dimensions to Iran's nuclear programme and actions required of Iran to resolve these.[46] Since 2002, the Agency has become increasingly

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[42] GOV/2012/55, para. 36.

[43] GOV/2013/6, para. 42.

[44] GOV/2012/55, para. 38.

[45] GOV/2012/55, para. 38. In addition, approximately 1.6 kg of $UF_6$ enriched up to 20% U-235 have been blended with natural $UF_6$ at PFEP (GOV/2012/23, para. 19).

[46] See, for example: GOV/2011/65, paras. 38-45 and Annex; GOV/2011/29, para. 35; GOV/2011/7, Attachment; GOV/2010/10, paras. 40-45; GOV/2009/55, paras. 18-25; GOV/2008/38, paras. 14-21; GOV/2008/15, paras. 14-25 and Annex; GOV/2008/4, paras. 35-42.

concerned about the possible existence in Iran of undisclosed nuclear related activities involving military related organizations, including activities related to the development of a nuclear payload for a missile. Iran has dismissed the Agency's concerns, largely on the grounds that Iran considers them to be based on unfounded allegations.[47]

51. The Annex to the Director General's November 2011 report (GOV/2011/65) provided a detailed analysis of the information available to the Agency, indicating that Iran has carried out activities that are relevant to the development of a nuclear explosive device. This information is assessed by the Agency to be, overall, credible.[48] Since November 2011, the Agency has obtained more information which further corroborates the analysis contained in the aforementioned Annex.

52. In resolution 1929 (2010), the Security Council reaffirmed Iran's obligations to take the steps required by the Board of Governors in its resolutions GOV/2006/14 and GOV/2009/82, and to cooperate fully with the Agency on all outstanding issues, particularly those which give rise to concerns about the possible military dimensions to Iran's nuclear programme, including by providing access without delay to all sites, equipment, persons and documents requested by the Agency.[49] As indicated in Section B above, since the publication of the Director General's November 2011 report, although the Board has adopted two resolutions addressing the urgent need to resolve outstanding issues regarding the Iranian nuclear programme, including those which need to be clarified to exclude the existence of possible military dimensions, it has not been possible to conclude the structured approach document or to begin substantive work with Iran in this regard.

53. **Parchin**: As stated in the Annex to the Director General's November 2011 report,[50] information provided to the Agency by Member States indicates that Iran constructed a large explosives containment vessel in which to conduct hydrodynamic experiments;[51] such experiments would be strong indicators of possible nuclear weapon development. The information also indicates that the containment vessel was installed at the Parchin site in 2000. The location at the Parchin site of the vessel was only identified in March 2011, and the Agency notified Iran of that location in January 2012.

54. As previously reported,[52] satellite imagery available to the Agency for the period from February 2005 to January 2012 shows virtually no activity at or near the building housing the containment vessel (chamber building). Since the Agency's first request for access to this location, however, satellite imagery shows that extensive activities and resultant changes have taken place at this location.[53] The Agency has reiterated during each round of talks with Iran its request for access to the location at the Parchin site, but Iran has not acceded to that request.

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[47] GOV/2012/9, para. 8.

[48] GOV/2011/65, Annex, Section B.

[49] S/RES/1929, paras. 2 and 3.

[50] GOV/2011/65, Annex, para. 49.

[51] GOV/2011/65, Annex, para. 47.

[52] GOV/2012/37, para. 42.

[53] For a list of the most significant developments observed by the Agency at this location between February 2012 and the publication of the Director General's February 2013 report, see GOV/2012/55, para. 44 and GOV/2013/6, para. 52.

55. Since the Director General's previous report, Iran has conducted further spreading, levelling and compacting of material over most of the site, a significant proportion of which it has also asphalted. There have also been indications of activity within the chamber building.

56. As previously reported,[54] Iran has stated that the allegation of nuclear activities at the Parchin site is "baseless" and that "the recent activities claimed to be conducted in the vicinity of the location of interest to the Agency, has nothing to do with specified location by the Agency". Iran's explanation for the soil displacement by trucks is that it was "due to constructing the Parchin new road".[55]

57. As the Agency has repeatedly made clear to Iran, the extensive activities that Iran has undertaken at the aforementioned location on the Parchin site have seriously undermined the Agency's ability to conduct effective verification. It is essential that Iran provide substantive answers to the Agency's detailed questions regarding Parchin and the foreign expert,[56] as requested by the Agency since February 2012,[57] and provide access to the location, without further delay.

## I. Design Information

58. Contrary to its Safeguards Agreement and relevant resolutions of the Board of Governors and the Security Council, Iran is not implementing the provisions of the modified Code 3.1 of the Subsidiary Arrangements General Part concerning the early provision of design information.[58] This reduces the level of confidence in the absence of other nuclear facilities. The absence of such early design information also has an adverse impact on the Agency's ability to verify the design of a facility and prevents the Agency from implementing an effective safeguards approach. This is particularly relevant to the facilities listed below.

59. **Research reactors**: As indicated above (para. 35), updated design information for the IR-40 Reactor is urgently required.

60. On 25 April 2013, Mr Ali Bagheri, Deputy Secretary of the Supreme National Security Council of Iran, stated that Iran was producing "20% uranium" to provide fuel for the TRR and for "four other reactors in four different parts of Iran which are under construction".[59] Following a request from the Agency to provide it with the relevant design information and the scheduling of the construction of these four reactors, Iran informed the Agency, in a letter dated 1 May 2013, that the new research reactors "are in preliminary site selection phase", that certain potential

[54] GOV/2012/37, para. 43.

[55] INFCIRC/847, 20 December 2012, para. 58.

[56] GOV/2011/65, Annex, para. 44.

[57] GOV/2012/9, para. 8.

[58] In accordance with Article 39 of Iran's Safeguards Agreement, agreed Subsidiary Arrangements cannot be changed unilaterally; nor is there a mechanism in the Safeguards Agreement for the suspension of provisions agreed to in the Subsidiary Arrangements. Therefore, as previously explained in the Director General's reports (see, for example, GOV/2007/22, 23 May 2007), the modified Code 3.1, as agreed to by Iran in 2003, remains in force. Iran is further bound by operative paragraph 5 of Security Council resolution 1929 (2010) to "comply fully and without qualification with its IAEA Safeguards Agreement, including through the application of modified Code 3.1".

[59] "Iran says it's ready to resume talks with world powers", Reuters, 25 April 2013.

locations were "under evaluation" and that "[m]ore information would be provided after the reactor site approval, consistent with the Code 3.1 of Iran's Subsidiary Arrangements to its Safeguards Agreement in force".

61. **Enrichment facilities**: As indicated above (para. 27), Iran has not provided design information in relation to the construction of ten new uranium enrichment facilities, including the five for which the sites have been decided.

62. **Nuclear power plants**: On 23 February 2013, H.E. Mr Fereydoun Abbasi, Vice President of Iran and Head of the Atomic Energy Organization of Iran (AEOI), is reported to have stated that Iran has identified 16 sites designated for the construction of nuclear power plants.[60] In a letter to Iran dated 6 March 2013, the Agency requested that, if Iran had decided to construct or to authorize construction of new power reactors, it provide the Agency with the relevant design information and the scheduling of their construction. In its reply dated 11 March 2013, Iran reiterated that it had suspended implementation of modified Code 3.1 and that, consequently, the Agency would receive the requested information "in due time as required by Code 3.1 of Iran's Subsidiary Arrangements to its Safeguards Agreement in force".

## J. Additional Protocol

63. Contrary to the relevant resolutions of the Board of Governors and the Security Council, Iran is not implementing its Additional Protocol. The Agency will not be in a position to provide credible assurance about the absence of undeclared nuclear material and activities in Iran unless and until Iran provides the necessary cooperation with the Agency, including by implementing its Additional Protocol.[61]

## K. Other Matters

64. As previously reported,[62] the Agency has been able to reduce its initial estimate of the discrepancy between the amount of nuclear material declared by the operator and that measured by the Agency in connection with conversion experiments carried out by Iran at the Jabr Ibn Hayan Multipurpose Research Laboratory (JHL) between 1995 and 2002.[63] This matter will be addressed as part of the Agency's overall verification of the correctness and completeness of Iran's declarations under its Safeguards Agreement.

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[60] "Iran to be 'advanced in industry, science' in dialogue with others — official", Islamic Republic News Agency [translation from Farsi of interview with Mr Abbasi], 23 February 2013, via BBC Monitoring; "Sixteen site-locations for the country's new nuclear power plants were identified", website of AEOI Public Relations and Information [translation from Farsi], 23 February 2013.

[61] Iran's Additional Protocol was approved by the Board on 21 November 2003 and signed by Iran on 18 December 2003, although it has not been brought into force. Iran provisionally implemented its Additional Protocol between December 2003 and February 2006.

[62] GOV/2012/37, para. 49.

[63] This material had been under Agency seal since 2003; GOV/2003/75, paras. 20-25 and Annex 1; GOV/2004/34, para. 32, and Annex, paras. 10-12; GOV/2004/60, para. 33, and Annex, paras. 1-7; GOV/2011/65, para. 49.

65. During an inspection carried out on 7 May 2013, the Agency confirmed, as previously reported,[64] that three fuel assemblies that had been produced in Iran and which contain uranium that was enriched in Iran up to 3.5% and up to 20% U-235 remained in the core of TRR.[65] During that inspection, Iran declared that five standard irradiated high enriched uranium fuel assemblies had been loaded into the TRR core and irradiated for a short period.[66]

66. During an inspection conducted by the Agency at the Bushehr Nuclear Power Plant on 11 and 12 May 2013, Iran informed the Agency that the reactor was shut down.

## L. Summary

67. While the Agency continues to verify the non-diversion of declared nuclear material at the nuclear facilities and LOFs declared by Iran under its Safeguards Agreement, as Iran is not providing the necessary cooperation, including by not implementing its Additional Protocol, the Agency is unable to provide credible assurance about the absence of undeclared nuclear material and activities in Iran, and therefore to conclude that all nuclear material in Iran is in peaceful activities.[67]

68. Iran continues not to implement modified Code 3.1 of its Subsidiary Arrangements General Part, notwithstanding statements it has made in relation to the construction of new research reactors, new uranium enrichment facilities and new power reactors. Moreover, the lack of up to date design information on the IR-40 Reactor is having an increasingly adverse impact on the Agency's ability to effectively verify the design of the facility and to implement an effective safeguards approach.

69. Contrary to the Board resolutions of November 2011 and September 2012 and despite the intensified dialogue between the Agency and Iran since January 2012 in ten rounds of talks, it has not been possible to reach agreement on the structured approach document. Given the nature and extent of credible information available to the Agency about possible military dimensions to Iran's nuclear programme, the Agency considers it essential and urgent for Iran to engage with it on the substance of the Agency's concerns. Unless Iran addresses the Agency's requirement to conduct effective verification, it will not be possible for the Agency to resolve outstanding issues, including those relating to possible military dimensions to Iran's nuclear programme.

70. The extensive and significant activities which have taken place since February 2012 at the location within the Parchin site to which the Agency has repeatedly

[64] GOV/2013/6, para. 60.

[65] On 7 May 2013, the core of TRR comprised a total of 33 fuel assemblies.

[66] In a letter dated 10 March 2013, Iran informed the Agency that these activities were part of a research project entitled "Numerical and experimental analysis of TRR mixed core transient behavior as a result of reactivity insertion".

[67] The Board has confirmed on numerous occasions, since as early as 1992, that paragraph 2 of INFCIRC/153 (Corr.), which corresponds to Article 2 of Iran's Safeguards Agreement, authorizes and requires the Agency to seek to verify both the non diversion of nuclear material from declared activities (i.e. correctness) and the absence of undeclared nuclear activities in the State (i.e. completeness) (see, for example, GOV/OR.864, para. 49 and GOV/OR.865, paras. 53-54).

requested access have seriously undermined the Agency's ability to undertake effective verification. The Agency reiterates its request that Iran, without further delay, provide substantive answers to the Agency's detailed questions regarding Parchin and the foreign expert, and provide access to the aforementioned location.

71. The Director General continues to urge Iran to fully implement its Safeguards Agreement and its other obligations and to engage with the Agency to achieve concrete results on all outstanding substantive issues, as required in the binding resolutions of the Board of Governors and the mandatory Security Council resolutions.

72. The Director General will continue to report as appropriate.